



SDMS Doc ID 2025217

## **POOR LEGIBILITY**

ONE OR MORE PAGES IN THIS DOCUMENT ARE DIFFICULT TO READ  
DUE TO THE QUALITY OF THE ORIGINAL

**ORDER NO. 95-15**  
**TECHNICAL MEMORANDUM No. 11**  
Omega Chemical Site, Phase II Program  
Whittier, California

**SUBJECT:** Order No. 95-15 Final Offsite CPT/Hydropunch Investigation

**SUBMITTED TO:** Kathryn D. Lawrence, EPA Region IX

**DATE:** 2/7/97

**SUBMITTED BY:** Edmond Bourke,  
OPOG Project Coordinator

**cc:** Omega Chemical Site Steering Committee  
Boone & Associates

---

## **1.0 INTRODUCTION**

The purpose of this Technical Memorandum (TM) is to supplement information provided by the hydrogeologic model discussed in the Phase II Close-Out Report. The available regional and site-specific data indicate that a thin "cigar-shaped" plume of contamination has migrated from the Omega Site (Site). Based on a set of conservative assumptions (e.g., ground water contamination occurred from the first day of operations), the model calculates that concentrations of PCE, the indicator constituent for the Site in the ground water<sup>(1)</sup>, fall below the Federal maximum contaminant level (MCL) of 5 parts per billion (ppb) at approximately 3,000 feet downgradient from the Site. In order to supplement the findings of the model, three CPT borings will be installed between the 3,000-foot point and the existing regional extraction wells (see Figure 1).

The remainder of this TM is presented in six sections (2.0 - 7.0) which outline the proposed activities in more detail and the procedures for implementing this work. The work in this TM is being conducted as the final task associated with Order No. 95-15 (the "Order").

## **2.0 BACKGROUND**

In developing the Scope of Work outlined in this TM, a number of existing and recently obtained resources were used which include:

- The two volume Phase II Close-Out Report (England & Hargis, October 1, 1996). *✓*
- DWR Bulletin No. 104 Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Appendix A Groundwater Geology, June 1961 (Reprinted May 1990).

(1) PCE has been identified as the leading indicator constituent at the Site due to: 1) its relative exceedance of MCLs during offsite ground water sampling activities in comparison to other Site-identified constituents; and 2) PCE has a longer residence time in ground water as it is a parent compound of the halogenated aliphatics. It should be noted however, that all constituents identified previously in offsite wells, will be analyzed for and evaluated.

**Technical Memorandum No. 11**  
Omega Chemical Site, Phase II Program  
February 7, 1997  
Page 2 of 6

- Analytical results of the City of Sante Fe Springs Extraction Well No. 1 (30R3). Sample dates May 16, 1996 and November 8, 1996 (Appendix A).
- Pump test and boring log data from the historic Chevron Station property on the southwest corner of Lambert Road and Washington Boulevard.

These resources provide the underlying information from which the site hydraulic model has been developed. The following is a summary of the key information supporting the model:

- The Site is underlain by low permeability silty and clayey soils (hydraulic conductivity of  $2.2 \times 10^{-6}$  cm/sec based on slug test) of the Upper Pleistocene Lakewood Formation to a depth greater than 120 feet (see Figure 12 in Appendix B).
- Although it is not present beneath the Site, the uppermost aquifer in the Site vicinity is probably the Gage aquifer of the Lakewood Formation (see Figure 2). The water table directly beneath the Site occurs within silt and clay and is apparently unconfined and of very poor quality with high total dissolved solids (TDS) concentrations.
- Ground water flow is generally toward the southwest (see Figure 8 in Appendix B) at a hydraulic gradient beneath the Site of 0.0125 which apparently flattens to 0.0015 southwest of the Site.
- The hydraulic conductivity value for the Gage Aquifer (which subsurface investigation results identify as beginning between the Site and Putnam Drive, see Figure 2) has been calculated (based on pump test results at the Chevron property) at  $1.9 \times 10^{-1}$  cm/sec.
- Extraction well 30R3 (which extracts approximately 1,200 gpm) is located over a mile downgradient of the Site. The screened interval is from 200 to 900 feet bgs. Because of the deep screened intervals, this extraction well draws water from deeper aquifers than the Gage aquifer (based on extraction well 30R3 drillers log in Appendix A). *Consequently*
- Analytical results from extraction well 30R3 were obtained from the City of Santa Fe Springs (see Appendix A). The two rounds of analytical results (May and November 1996) illustrate that there are no constituents exceeding MCLs.

**Technical Memorandum No. 11**  
Omega Chemical Site, Phase II Program  
February 7, 1997  
Page 3 of 6

- PCE, TCE and other constituent concentrations declined with increased depth, with increasing distance from the Site, and cross gradient of the regional flow direction.
- Using PCE as an indicator, the hydrogeologic model predicts a potential total plume length of approximately 3,000 to 3,150 feet to reach levels at or below MCLs (see Figure 23 in Appendix B). *only 1 data point*

Based on review of the many sources of data outlined above and illustrated in Figure 2, a series of CPT/Hydropunch borings are proposed to finalize the characterization of ground water conditions associated with the Omega Site under the Order. The CPT/Hydropunch locations are proposed primarily due to the hydraulic conductivity of  $1.9 \times 10^{-1}$  which creates a more rapid constituent movement, yielding a thin affected area and avoiding cross gradient or deeper aquifer impacts.

Figure 2 illustrates the upper aquifers identified in the area of the Site. The deeper aquifers which contain the screen intervals for well 30R3 are located approximately 50 feet below the depth illustrated in Figure 2 (approximately 200 feet bgs). This would suggest it is highly unlikely there is any impact on extraction well 30R3 from activities at the Site and indicates that there is no need for ground water sampling below the Gage Aquifer.

This is consistent with the analytical results for extraction well 30R3 which have been consistently below MCLs (see Appendix A), reinforcing the conclusion to only sample ground water in the shallow aquifer. A final consideration discouraging deeper aquifer sampling is the increased potential for cross contamination associated with drilling through the aquiclude.

### **3.0 DESCRIPTION OF FIELD WORK**

Based on the discussion and hydrogeologic model outlined above, discussion in the Phase II Close-Out Report (England/Hargis 1996d), and the proximity of the downgradient extraction wells, the following CPT boring locations are proposed:

- H-14 - Along Sorenson Avenue, South of Washington Boulevard and up gradient of inactive regional extraction well 29E5.
- H-15 - Along Wellsford Place, South of Rivera Road and up gradient of active regional extraction well 30R3.

- H-16 - Along Sante Fe Springs Road, South of Slauson Avenue and up gradient of inactive regional extraction well 32G3.

The procedures for installing the CPT borings and performing Hydropunch sampling to assess the hydraulic model include:

- The first CPT/Hydropunch boring will be installed on Wellsford Place and will include cone penetrometer analysis to assess localized geology in the area and identify the appropriate ground water sampling depth (estimated at 60 feet bgs). Upon completion and analysis of the data, the driller will proceed to the remaining two CPT/Hydropunch locations and obtain ground water samples for analysis.
- Temporary piezometers will be used at one or more locations to assist in defining hydraulic gradients for the area. Street plans from the City of Santa Fe Springs Engineering Department will be used to estimate the surface elevation of the CPT boring to within approximately 0.10 feet.
- The three ground water samples will be sent to BC analytical laboratory (or equivalent) and tested for VOCs (including Freons) using EPA Method 8240.
- Decontamination, sample handling, and borehole abandonment procedures will be performed in accordance with the SOPs and QAP described in the Phase II Workplan (England/Hargis, 1995), SOP Addendum (England/Hargis, 1996c), and with methods prescribed for CPT/Hydropunch testing in TM-4 and TM-4A (England/Hargis, 1996a and 1996b).

#### **4.0 IMPLEMENTATION SCHEDULE**

Pending EPA approval of this Technical Memorandum by February 14, 1997, the proposed offsite CPT testing program is tentatively scheduled for the week of February 17, 1997 and ground water analyses should be completed by March 6, 1997 (see Figure 3).

The results of CPT testing, ground water sampling and fate and transport calculations will be summarized in a Report of Findings which can be completed by March 31, 1997, assuming the schedule above, and appended to the Phase II Close-Out Report.

**5.0 HEALTH AND SAFETY ISSUES**

Health and Safety procedures during field activities will generally be implemented as described in the Phase II Workplan, as amended in TM-4 and TM-4A. However, because the proposed field work will take place entirely offsite, away from potentially VOC-affected areas, and due to the "remote" nature of CPT/Hydropunch sampling, air quality monitoring will not be conducted during these field activities.

**6.0 STANDARD OPERATING PROCEDURE ISSUES**

Field activities recommended above are addressed in the SOPs published in the Phase II Workplan (England/Hargis, 1995), or in the SOP Addendum (England/Hargis, 1996c).

**7.0 QUALITY ASSURANCE PROGRAM ISSUES**

No modifications to the Quality Assurance (QA) procedures for ground water sampling (England/Hargis, 1995) are recommended.

EPA Approval by: \_\_\_\_\_

Date: \_\_\_\_\_

Approved

Approval Conditional Upon Attached Comments

Disapproved

Additional Information is Required

---

---

---

**Attachments:**

Figure 1 Proposed downgradient CPT locations Omega Chemical Site

Figure 2 Section A-A' Omega Chemical Site

Figure 3 Schedule For Technical Memorandum No. 10 Phase II Program

Appendix A Extraction Well 30 R-3 Analytical Results (May 16, 1996 and November 8, 1996)

Appendix B Select Figures from Phase II Close-Out Report

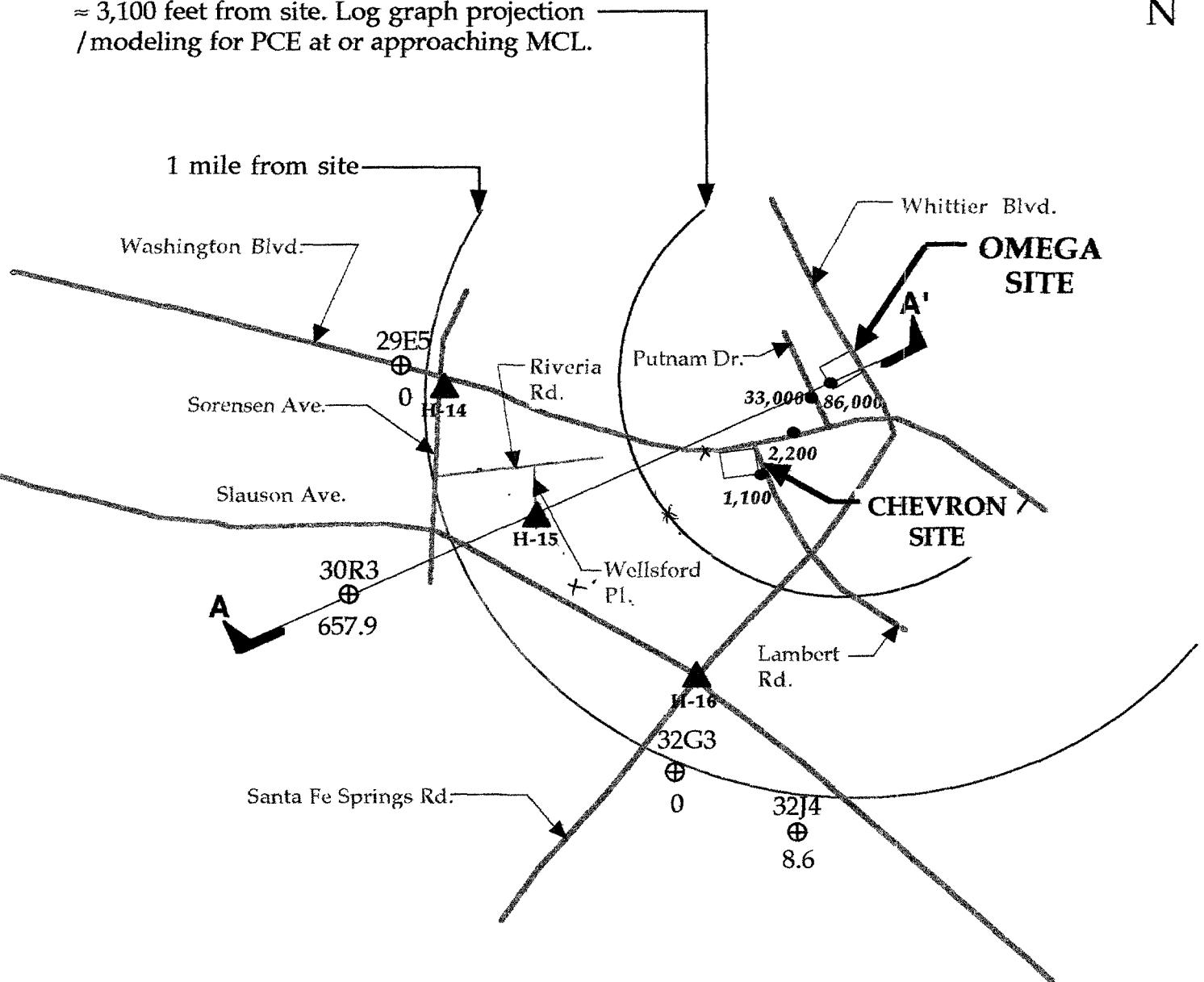
## **REFERENCES**

- England & Associates, Hargis + Associates, Inc. (England/Hargis), 1995. Phase II Workplan, Omega Chemical Site PRP Organized Group, Whittier, California. October 27, 1995.
- England & Associates, Hargis + Associates, Inc., 1996a. Technical Memorandum No. 4: Shallow Soil Sampling. January 22, 1996.
- England & Associates, Hargis + Associates, Inc., 1996b. Technical Memorandum No. 4-A: Supplemental Sampling Information and Offsite CPT Sampling. January 25, 1996.
- England & Associates, Hargis + Associates, Inc., 1996c. Addendum No. 1: Standard Operation Procedures for Field Activities, Omega Chemical Site, Whittier, California. March 18, 1996.
- England & Associates, Hargis + Associates, Inc., 1996d. Phase II Close-Out Report. October 1, 1996.
- U.S. Environmental Protection Agency (EPA), 1995. Unilateral Administrative Order, Docket Number 95-15. Issued to Omega Chemical Corporation and Respondents, Whittier, California. May 9, 1995.

**Figure 1**  
**Proposed Downgradient CPT Locations**  
**Omega Chemical Site**

N

≈ 3,100 feet from site. Log graph projection  
 /modeling for PCE at or approaching MCL.

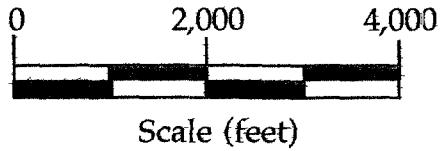


#### LEGEND

32J4 Regional Extraction Well (Identification/  
 8.6 1995 volume in millions of gallons)

H-16 Proposed CPT Location

● Existing CPT/Monitoring Well (PCE  
 Concentration  $\mu\text{g}/\text{l}$ )



**FIGURE 2**  
**SECTION A-A'**  
**OMEGA CHEMICAL SITE**

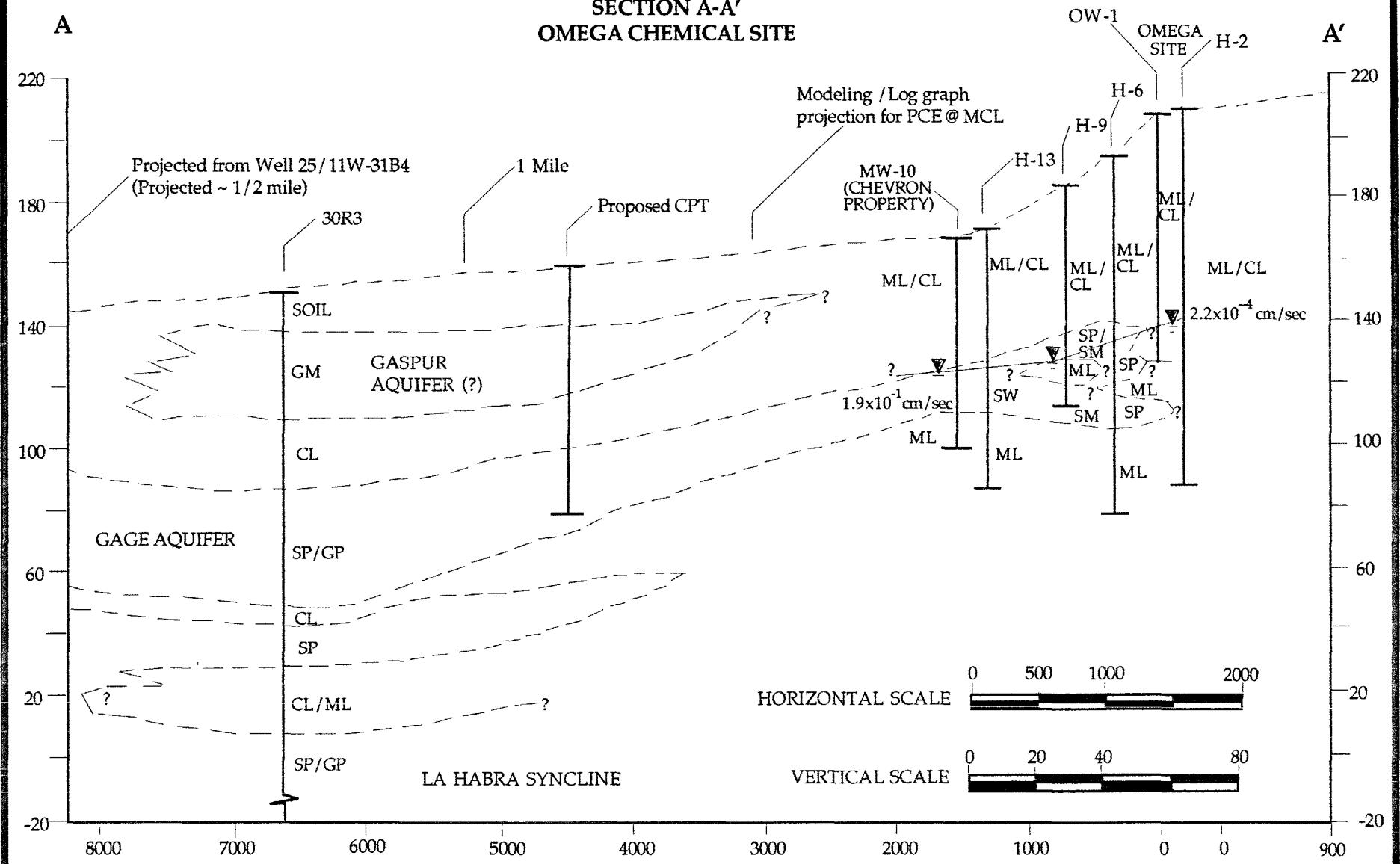


FIGURE 3

SCHEDULE FOR  
 TECHNICAL MEMORANDUM NO. 10  
 PHASE II PROGRAM  
 OMEGA CHEMICAL SITE

ACTIVITY	JANUARY 1997					FEBRUARY 1997												MARCH 1997							APRIL 1997														
	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	10	11	12	13	14	17	18	19	20	21	24	25	26	27	28	31	1	2	3	4	5	7	8
Prepare Technical Memorandum No. 10																																							
Obtain necessary permits from City and County Agencies for drilling activities																																							
Submit T.M. No. 10 to EPA																	X																						
EPA review and approval of T.M. No. 10																		X																					
Mobilize drilling contractor and perform work																																							
Send ground water samples to laboratory and obtain analytical results																																							
Assess Phase II modeling calculations																																							
Prepare Report Of Findings																																							
Submit Report of Findings to EPA as an Appendix to Closeout Report																																							
EPA approval of Report of Findings and Close-Out of Phase II Program																																					X		

## LEGEND



Work Activity  
Review  
Approval



---

---

# **APPENDIX A**

---



**EXTRACTION WELL 30 R-3  
ANALYTICAL RESULTS  
(May 16, 1996 and November 8, 1996)**

## OF NIC CHEMICAL ANALYSIS (04 5)

Date of Report: DEC 22, 1996

Sample ID No. 961108107

Laboratory

Signature Lab

Name: Montgomery Laboratories

Director: *Jean C. Hein* For Andrew Eaton

Name of Sampler: Frank Larno

Employed By: QMS

Date/Time sample Date/Time Sample

Date Analyses

Collected: 11/08/96 09:10 Received @ Lab: 11/08/96 04:12 Completed: 11/21/96

System

System

Name: Santa Fe Springs, City of

Number: 1910245

Name or Number of Sample Source: WELL 1 02S/11W-30R03

User ID: [ 4 | t | h ]

Station Number: [ 0 | 2 | S | / | 1 | 1 | W | - | 3 | 0 | R | 0 | 3 | | S ]

Date/Time of Sample: [ 9 | 6 | 1 | 1 | 0 | 8 | 0 | 9 | 1 | 0 ] Laboratory Code: [ 9 | 5 | 9 | 0 ]  
Y Y M M D D T T T TDate Analyses Completed : [ 9 | 6 | 1 | 1 | 2 | 1 ]  
Y Y M M D D

Submitted By: \_\_\_\_\_ Phone #: \_\_\_\_\_

## REGULATED ORGANIC CHEMICALS

Test Method	CONSTITUENTS ALL CONSTITUENTS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	*DLR ug/L
502.2	Bromodichloromethane	32101	N D		0.50
502.2	Bromoform	32104	N D		0.50
502.2	Chloroform(Trichloromethane)	32106	N D		0.50
502.2	Dibromochloromethane	32105	N D		0.50
502.2	Total Trihalomethane (THM's/TTHM)	82080	N D	100	0.50
502.2	Benzene	34030	N D	1	0.50
502.2	Carbon Tetrachloride	32102	N D	.5	0.50
502.2	1,2-Dichlorobenzene (o-DCB)	34536	N D	600	0.50
502.2	1,4-Dichlorobenzene (p-DCB)	34571	N D	5	0.50
502.2	1,1-Dichloroethane (1,1-DCA)	34496	N D	5	0.50
502.2	1,2-Dichloroethane (1,2-DCA)	34531	N D	.5	0.50
502.2	1,1-Dichloroethylene (1,1-DCE)	34501	N D	6	0.50
502.2	cis-1,2-Dichloroethylene	77093	N D	6	0.50
502.2	trans-1,2-Dichloroethylene	34546	N D	10	0.50
502.2	Dichloromethane (Meth Chlor)	34423	N D	5	0.50
502.2	1,2-Dichloropropane	34541	N D	5	0.50
502.2	Total 1,3-Dichloropropene	34561	N D	.5	0.50
502.2	Ethyl benzene	34371	N D	700	0.50
502.2	Monochlorobenzene (Chlorobenzene)	34301	N D	70	0.50
502.2	Styrene	77128	N D	100	0.50
502.2	1,1,2,2-Tetrachloroethane	34516	N D	1	0.50
502.2	Tetrachloroethylene (PCE)	34475	N D	5	0.50
502.2	Toluene	34010	N D	150	0.50
502.2	1,2,4-Trichlorobenzene	34551	N D	70	0.50
502.2	1,1,1-Trichloroethane (1,1,1-TCA)	34506	N D	200	0.50
502.2	1,1,2-Trichloroethane (1,1,2-TCA)	34511	N D	5	0.5
502.2	Trichloroethylene (TCE)	39180	0   .   8	5	0.50

Santa Fe Springs, City c

WEL 1 02S/11W-30R03

Test Method	CONSTITUENTS ALL CONSTITUENTS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	*DLR ug/L
502.2	Trichlorofluoromethane (Freon 11)	34488	N D	150	5
502.2	Trichlorotrifluoroethane (Freon 113)	81611	N D	1200	10
502.2	Vinyl chloride (VC)	39175	N D	.5	0.50
502.2	m,p-Xylene	A-014	N D		0.50
502.2	o-Xylene	77135	N D		0.50
502.2	Total Xylenes (m,p & o)	81551	N D	1750	0.50
504	Dibromochloropropane (DBCP)	38761		.2	0.01
504	Ethylene Dibromide (EDB)	77651		0.05	0.02
525.2	Endrin	39390		2	0.1
525.2	Lindane (gamma-BHC)	39340		0.2	0.2
525.2	Methoxychlor	39480		40	10
508	Toxaphene	39400		3	1
508	Chlordane	39350		.1	0.1
525.2	Diethylhexylphthalate (DEHP)	30100		4	3.
525.2	Heptachlor	39410		.01	0.01
525.2	Heptachlor epoxide	39420		.01	0.01
507	Atrazine	39033		3	1
507	Molinate (Ordran)	82199		20	2
507	Simazine (Princep)	39055		4	1
507	Thiobencarb (Bolero)	A-001		70	1.0
525.2	Alachlor (Alanex)	77825		2	1
515.1	Bentazon (Basagran)	38710		18	2.0
525.2	Benzo(a)pyrene	34247		0.2	.1
1613	2,3,7,8-TCDD (Dioxin)	34676		3E-5	5E-6
515.1	2,4-D	39730		70	10
515.1	2,4,5-TP (Silvex)	39045		50	1
531.1	Carbofuran (Furadan)	81405		18	5
515.1	Dalapon (Dowpon)	38432		200	10
515.1	Dinoseb (DNBP)	81287		7	2
549	Diquat	78885		20	4.
525.2	Di(2-ethylhexyl)adipate	A-026		400	5
548	Endothall	38926		100	45.
547	Glyphosate	79743		700	25.
525.2	Hexachlorobenzene	39700		1	0.5
525.2	Hexachlorocyclopentadiene	34386		50	1
531.1	Oxamyl (Vydate)	38865		200	20.
525.2	Pentachlorophenol (PCP)	39032		1	0.2
515.1	Pichloram (Tordon)	39720		500	1
508	Total PCB's	39516		**	0.5

\* MCL is for either singer isomer or the sum of the isomers

+ Indicates Secondary Drinking Water Standards

THIS PORTION LEFT BLANK INTENTIONALLY

Santa Fe Springs, City c

WELL 02S/11W-30R03

Test Method	CONSTITUENTS ALL CONSTITUENTS REPORTED	ENTRY #	ANALYSES RESULTS	MCL ug/L	*DLR ug/L
502.2	Bromobenzene	81555	I I I N D	0.50	
502.2	Bromochloromethane	A-012	I I I N D	0.50	
502.2	Bromomethane (Methyl Bromide)	34413	I I I N D	0.50	
502.2	n-Butylbenzene	A-010	I I I N D	0.50	
502.2	sec-Butylbenzene	77350	I I I N D	0.50	
502.2	tert-Butylbenzene	77353	I I I N D	0.50	
502.2	Chloroethane	34311	I I I N D	0.50	
524.2	2-Chloroethylvinyl ether	34576	I I I I I	1.0	
502.2	Chloromethane (Methyl Chloride)	34418	I I I N D	0.50	
502.2	2-Chlorotoluene	A-008	I I I N D	0.50	
502.2	4-Chlorotoluene	A-009	I I I N D	0.50	
502.2	Dibromomethane	77596	I I I N D	0.50	
502.2	1,3-Dichlorobenzene (m-DCB)	34566	I I I N D	0.5	
502.2	Dichlorodifluoromethane	34668	I I I N D	1.0	
502.2	1,3-Dichloropropane	77173	I I I N D	0.50	
502.2	2,2-Dichloropropane	77170	I I I N D	0.50	
502.2	1,1-Dichloropropene	77168	I I I N D	0.50	
502.2	Hexachlorobutadiene	34391	I I I N D	0.50	
502.2	Isopropylbenzene (Cumene)	77223	I I I N D	0.50	
502.2	p-Isopropyltoluene	A-011	I I I N D	0.50	
502.2	Naphthalene	34696	I I I N D	0.50	
502.2	n-Propylbenzene	77224	I I I N D	0.50	
502.2	1,1,1,2-Tetrachloroethane	77562	I I I N D	1	0.50
502.2	1,2,3-Trichlorobenzene	77613	I I I N D	0.50	
502.2	1,2,3-Trichloropropane	77443	I I I N D	0.50	
502.2	1,2,4-Trimethylbenzene	77222	I I I N D	0.50	
502.2	1,3,5-Trimethylbenzene	77226	I I I N D	0.50	
524.2	Methyl ethyl ketone (Butanone)	81595	I I I I I	5.0	
524.2	Methyl isobutyl ketone (MIBK)	81596	I I I I I	5.0	
502.2	Methyl Tert-butyl ether (MTBE)	A-030	I I I N D	5.0	
531.1	Aldicarb (Temik)	39053	I I I I I	3.0	
531.1	Aldicarb sulfone	A-020	I I I I I	4.	
531.1	Aldicarb sulfoxide	A-019	I I I I I	3.	
525.2	Aldrin	39330	I I I I I	.075	
507	Bromacil (Hyvar)	82198	I I I I I	10	
531.1	Butachlor	77860	I I I I I	.38	
531.1	Carbaryl (Sevin)	77700	I I I I I	5	
508	Chlorothalonil (Daconil, Bravo)	70314	I I I I I	5.0	
525.2	Diazinon	39570	I I I I I	0.25	
515.1	Dicamba (Banvel)	82052	I I I I I	.081	
525.2	Dieldrin	39380	I I I I I	.02	
525.2	Dimethoate (Cygon)	38458	I I I I I	10	
632	Diuron	39650	I I I I I	1.0	
531.1	3-Hydroxycarbofuran	A-021	I I I I I	3.0	
531.1	Methomyl	39051	I I I I I	2.0	
507	Metolachlor	39356	I I I I I		
507	Metribuzin	81408	I I I I I		
525.2	Prometryn (Caparol)	39057	I I I I I	2.0	
525.2	Propachlor	38533	I I I I I	0.5	

Laboratory comments and description of any additional compounds found:

## CLINICAL LABORATORY OF SAN BERNARDINO, INC. CENTRAL BASIN

21881 BARTON ROAD

GRAND TERRACE, CA 92313

## ORGANIC CHEMICAL ANALYSIS (3/96)

ED

Date of Report: 06/12/96

Sample ID No.C62389X-1A

Laboratory

Signature Lab

Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director:

Name of Sampler: B.BLOWNEY Employed By: CLINICAL LAB

Date/Time Sample

Date/Time Sample

Collected: 96/05/16/1410 Received @ Lab: 96/05/16/1600 Completed: 96/05/21

System

Number: 1910245

System

Name: CITY OF SANTA FE SPRINGS

Name or Number of Sample Source: WELL 01

\* User ID: 4th

Station Number: 02S/11W-30R01 5

\* Date/Time of Sample: |96|05|16|1410|

Laboratory Code: 3761

\* YY MM DD TTTT

YY MM DD

\* Submitted by:

Date Analysis Completed: |96|05|28|

Phone #:

\*\*\*\*\*

PAGE 1 OF 2

## REGULATED ORGANIC CHEMICALS

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
502.2	Bromodichloromethane	32101	ND	0.	0.
502.2	Bromoform	32104	ND	0.	0.
502.2	Chloroform (Trichloromethane)	32106	ND	0.	0.
502.2	Dibromochloromethane	32105	ND	0.	0.
502.2	Total Trihalomethanes (THM'S/ TTHM)	32080	ND	100	0.
502.2	Benzene	34030	ND	1	0.
502.2	Carbon Tetrachloride	32102	ND	.5	0.
502.2	1,2-Dichlorobenzene (o-DCB)	34536	ND	600	0.
502.2	1,4-Dichlorobenzene (p-DCB)	34571	ND	5	0.
502.2	1,1-Dichloroethane (1,1-DCA)	34496	ND	5	0.
502.2	1,2-Dichloroethane (1,2-DCA)	34531	ND	.5	0.
502.2	1,1-Dichloroethylene (1,1-DCE)	34501	ND	6	0.
502.2	cis-1,2-Dichloroethylene (c-1,2-DCE)	77093	ND	6	0.
502.2	trans-1,2-Dichloroethylene (t-1,2-DCE)	34546	ND	10	0.
502.2	Dichloromethane (Methylene Chloride)	34423	ND	3	0.
502.2	1,2-Dichloropropane	34541	ND	5	0.
502.2	Total 1,3-Dichloropropane	34561	ND	.5	0.
502.2	Ethyl Benzene	34371	ND	700	0.
502.2	Monochlorobenzene (Chlorobenzene)	34301	ND	70	0.
502.2	Styrene	77128	ND	100	0.
502.2	1,1,2,2-Tetrachloroethane	34516	ND	1	0.
502.2	Tetrachloroethylene (PCE)	34475	ND	5	0.
502.2	Toluene	34010	ND	150	0.
502.2	1,2,4-Trichlorobenzene	34551	ND	70	0.
502.2	1,1,1-Trichloroethane (1,1,1-TCA)	34506	ND	200	0.
502.2	1,1,2-Trichloroethane (1,1,2-TCA)	34511	ND	5	0.
502.2	Trichloroethylene (TCE)	39180	0.9	5	0.
502.2	Trichlorofluoromethane (FREON 11)	34488	ND	150	5.
502.2	Trichlorotrifluoroethane (FREON 113)	81611	ND	1200	10.
502.2	Vinyl Chloride (VC)	39175	ND	.5	0.

Post-It® Fax Note	7671	Box 12-23-96
To	127	From
Call Back		On
Phone #	407-247-4753	Phone #
Fax #	407-247-2511	Fax #

PAGE 2 OF 2

## REGULATED ORGANIC CHEMICALS CONTINUED C62389X-1A

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
502.2	m,p-Xylene	A-014	ND	0.5	
502.2	o-Xylene	77135	ND	0.5	
502.2	Total Xylenes (m,p, & o)	81551	ND	1750	0.5

## UNREGULATED ORGANIC CHEMICALS

502.2	Bromobenzene	81555	ND	0.5
502.2	Bromochloromethane	A-012	ND	0.5
502.2	Bromomethane (Methyl Bromide)	34413	ND	0.5
502.2	n-Butylbenzene	A-010	ND	0.5
502.2	sec-Butylbenzene	77350	ND	0.5
502.2	tert-Butylbenzene	77353	ND	0.5
502.2	Chloroethane	34311	ND	0.5
502.2	2-Chloroethylvinyl Ether	34576	ND	1.0
502.2	Chloromethane (Methyl Chloride)	34418	ND	0.5
502.2	2-Chlorotoluene	A-008	ND	0.5
502.2	4-Chlorotoluene	A-009	ND	0.5
502.2	Dibromomethane	77596	ND	0.5
502.2	1,3-Dichlorobenzene (m-DCB)	34566	ND	0.5
502.2	Dichlorodifluoromethane	34668	ND	1.0
502.2	1,1-Dichloropropane	77173	ND	0.5
502.2	2,2-Dichloropropane	77170	ND	0.5
502.2	1,1-Dichloropropane	77168	ND	0.5
502.2	Hexachlorobutadiene	34391	ND	0.5
502.2	Isopropylbenzene (Cumene)	77223	ND	0.5
502.2	p-Isopropyltoluene	A-011	ND	0.5
502.2	Methyl tert-Butyl Ether (MTBE)	A-010	ND	1.0
502.2	Naphthalene	34696	ND	0.5
502.2	n-Propylbenzene	77224	ND	0.5
502.2	1,1,1,2-Tetrachloroethane	77562	ND	0.5
502.2	1,2,3-Trichlorobenzene	77613	ND	0.5
502.2	1,2,3-Trichloropropane	77443	ND	0.5
502.2	1,2,4-Trimethylbenzene	77222	ND	0.5
502.2	1,3,5-Trimethylbenzene	77226	ND	0.5

Post-# Fax Note	7671	Date	12-2-2000
to	75-141555	From	75-141555
Call#	On	Phone#	609-243-5111
Phone#	Phone#	Phone#	609-243-5111
Post#	Post#	Post#	75-141555

*Sorry,**I read you the wrong well -*

CITY ENGINEER

QUADRUPPLICATE ASST. CITY ENGR.  
RETAIN THIS COPY ST. MAINT. SUPT.

WATER WELL DRILLERS RE.

(Sections 7076, 7077, 7078, Water Code)

Do Not Fill In

Nº 30410

State Well No.

Other Well No.

## STATE OF CALIFORNIA

## (1) OWNER:

Name City of Santa Fe Springs

Address Santa Fe Springs, California

## (2) LOCATION OF WELL:

County Los Angeles Owner's number, if any 31  
R. P. D. or Street No 11600 Ford and Burke Streets, in  
back of Fire Station Number 2

Start - End At : 7/11/61 End 7/13

## (3) TYPE OF WORK (check):

New well  Deepening  Reconditioning  Abandon 

If abandonment, describe material and procedure in Item 11.

## (4) PROPOSED USE (check):

Domestic  Industrial  Municipal Irrigation  Test Well  Other 

## (5) EQUIPMENT:

Rotary   
Cable   
Dug Well 

## (6) CASING INSTALLED:

SINGLE  DOUBLE 

From	ft. to	to	Gage or Wall	Diameter of Bore	from	to
" 0	300	" 16	" 5/16	"	5 1/2	" 10
" 300	600	" 12	" 5/16	"	"	"
" 0	50	" 20	" 1/2	"	"	"

Type and size of shoe or well ring

Describe joint  SAE Plug

Size of gravel

Size of gravel

## (7) PERFORATIONS:

Type of perforator used Electro-Horizontal

Size of perforations	in. length by	in.	Perf per row	Rows per ft
" 2 1/2	" 2 1/2	"	"	"
" 2 1/2	" 2 1/2	"	"	"
" 2 1/2	" 2 1/2	"	"	"
" 2 1/2	" 2 1/2	"	"	"

## (8) CONSTRUCTION:

Was a surface sanitary seal provided?  Yes  No To what depth 60 ft.Were any streets sealed against pollution?  Yes  No If yes, note depth of street

From	ft. to	ft.
" "	" "	"

Method of Sealing

## (9) WATER LEVELS:

Depth at which water was first found 206 ft.

Standing level before perforating 206 ft.

Standing level after perforating 206 ft.

## (10) WATERS TESTS:

## (11) WELL LOG:

Total depth 904 ft. Depth of completed well 900

Formation: Describe by color, character, size of material, and structure.

0	" 20	"	Surface soil
10	" 40	"	Sand, gravel, silty clay
40	" 53	"	Brown clay
53	" 63	"	Reddish brown clay
63	" 102	"	Sand and small gravel
102	" 108	"	Brown silty clay
108	" 1218	"	Fine sand
1218	" 143	"	Brown clay and silt
143	" 173	"	Sand and small gravel
173	" 173	"	Clay and silt
173	" 273	"	Sand and silt, layers
273	" 303	"	Grey clay and silt layers
303	" 313	"	Sand and silt
313	" 323	"	Clay with silt layers
323	" 363	"	Coarse sand and gravel
363	" 453	"	Hard blue grey clay and sand
453	" 473	"	Fine sand
473	" 523	"	Fine sand and soft clay
523	" 526	"	Clay with sand layers
526	" 634	"	Sand and gravel (soil)
634	" 674	"	Hard clay layers of sand
674	" 676	"	Sand and gravel (coarse)
676	" 894	"	Siltstone
894	" 904	"	Very hard sandstone

Work started 7/11/61 Completed 7/15/61

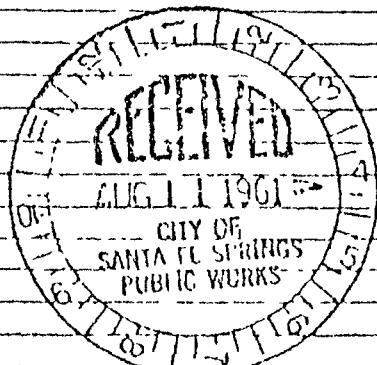
## WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME JOHN LEE (Signature) Corporation (Listed in printed)

Address 11119 Lakewood

White Oak, Calif. 90007



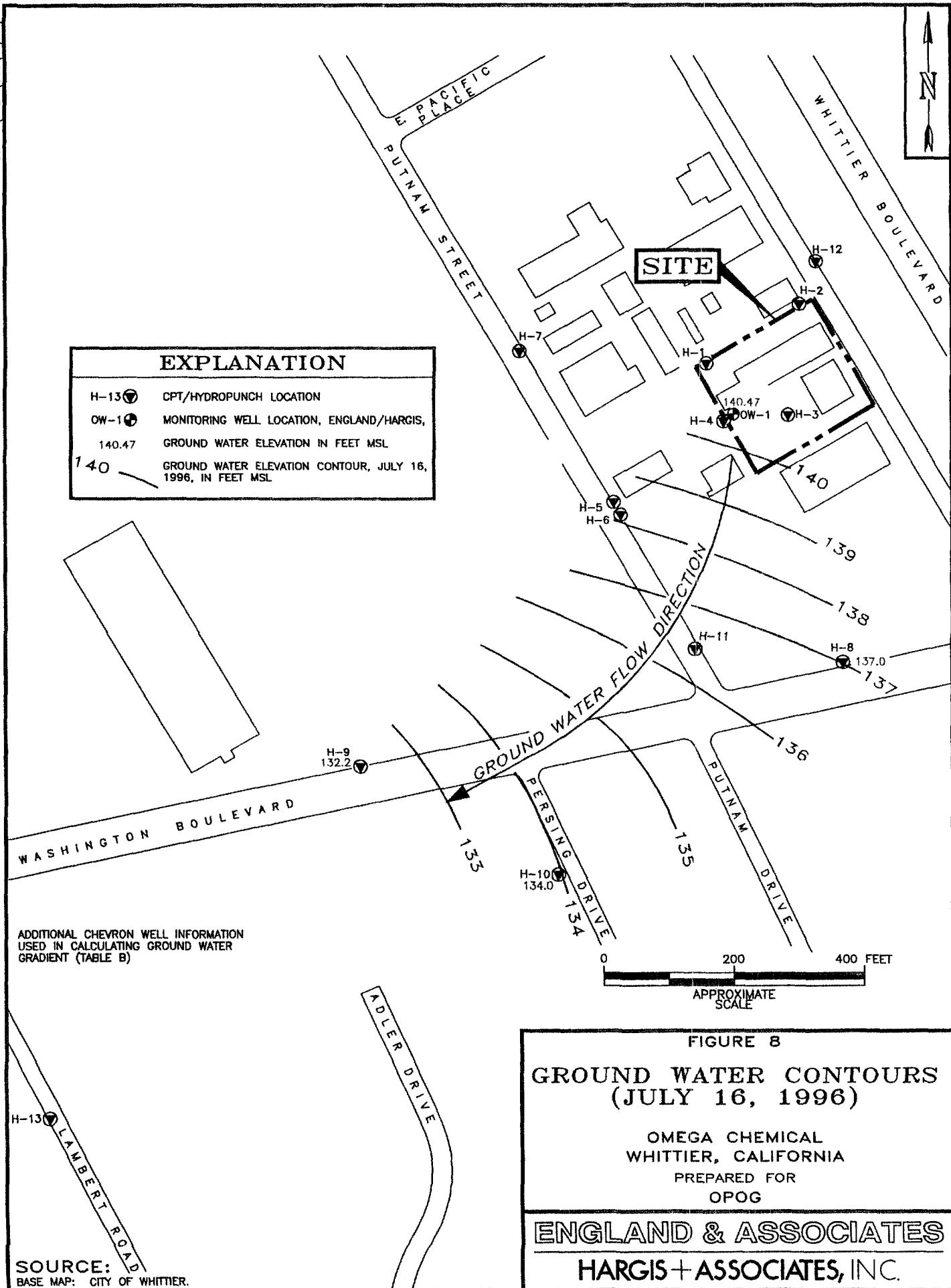
---

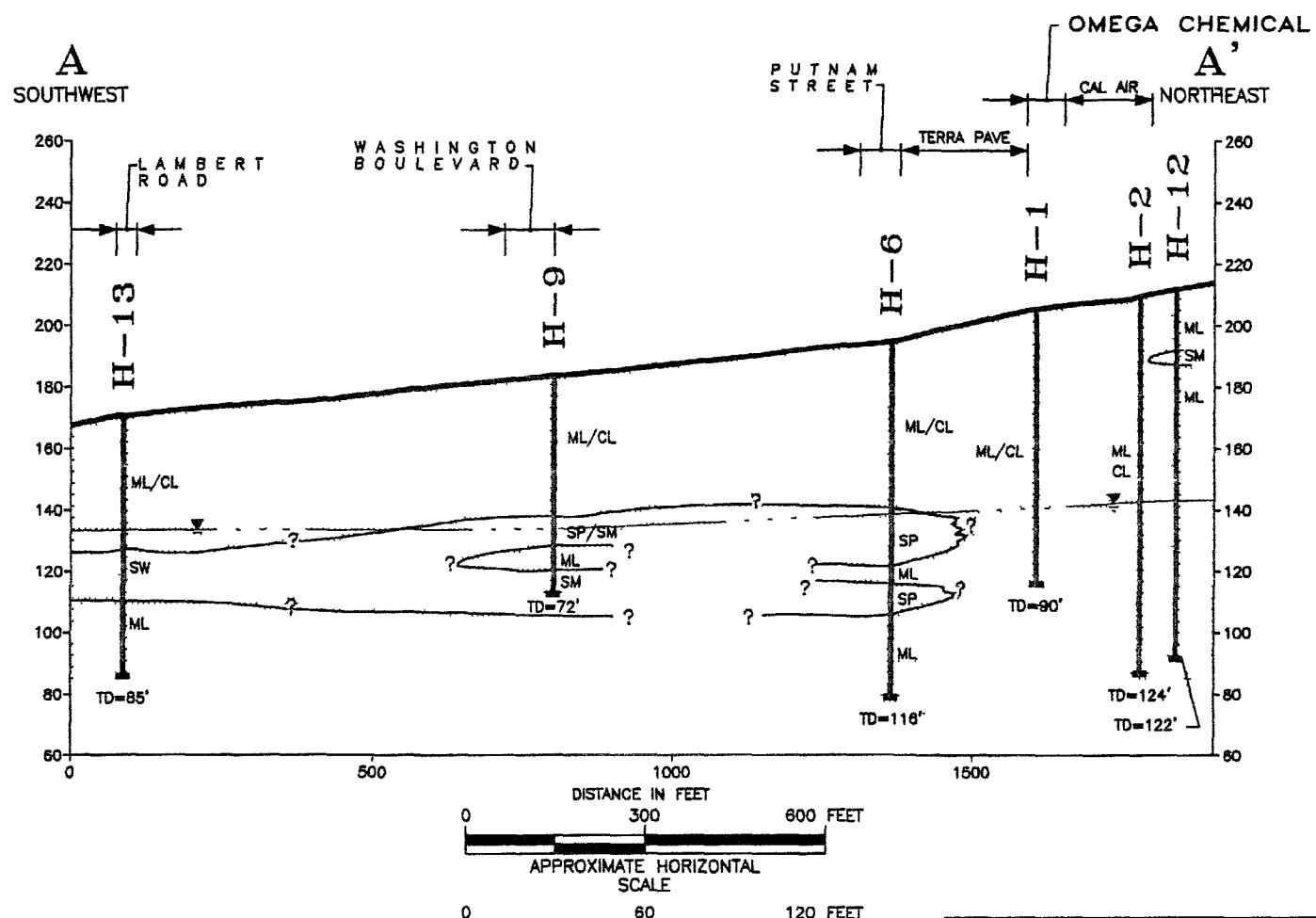
---

# **APPENDIX B**



**SELECT FIGURES FROM  
PHASE II CLOSE-OUT REPORT**

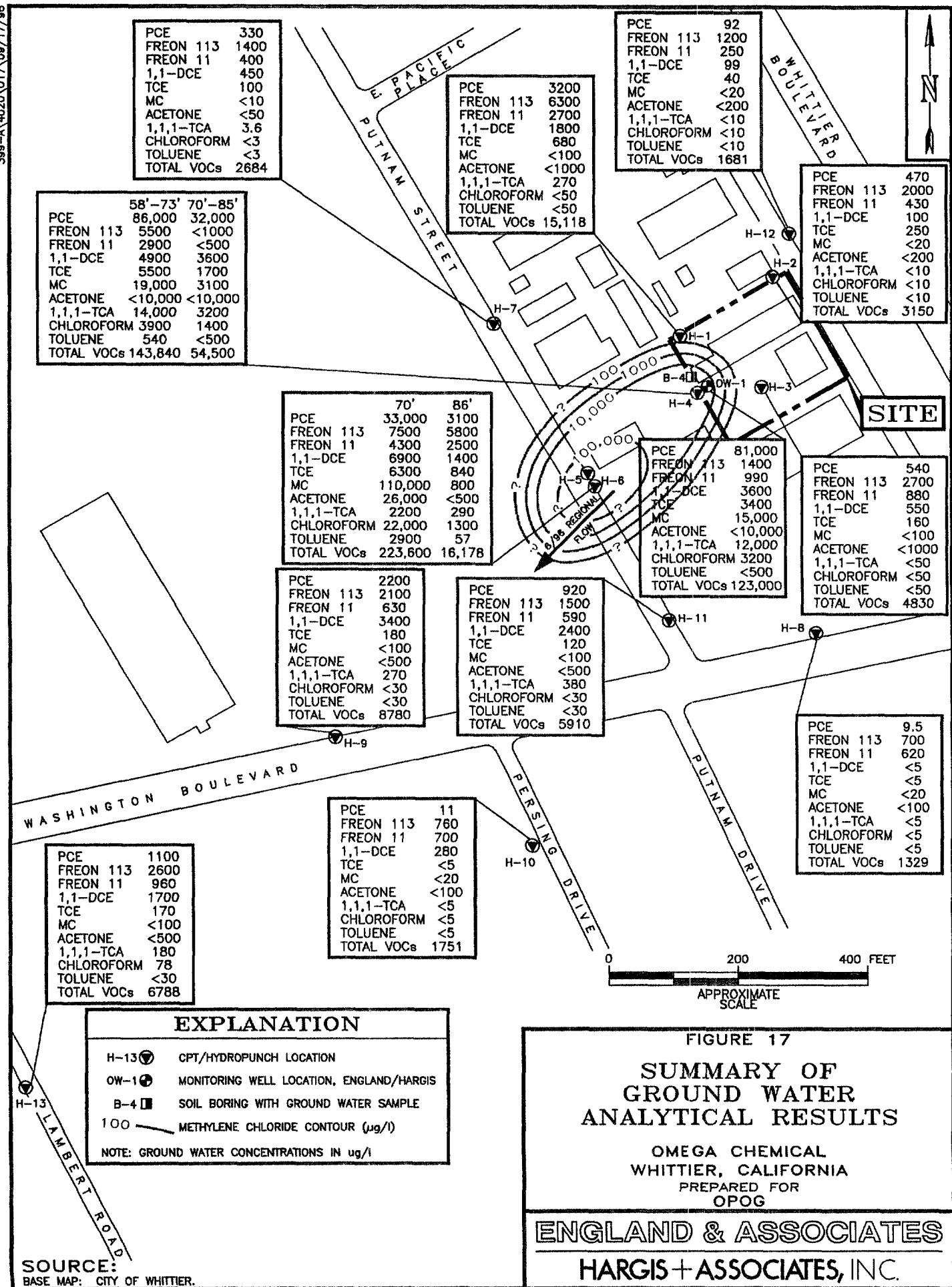




**FIGURE 12**  
**CROSS SECTION A-A'**

OMEGA CHEMICAL WHITTIER, CALIFORNIA  
PREPARED FOR OPOG

**ENGLAND & ASSOCIATES**  
**HARGIS + ASSOCIATES, INC.**



**FIGURE 17**  
**SUMMARY OF GROUND WATER ANALYTICAL RESULTS**

OMEGA CHEMICAL  
WHITTIER, CALIFORNIA  
PREPARED FOR  
OPOG

**ENGLAND & ASSOCIATES**  
**HARGIS + ASSOCIATES, INC.**

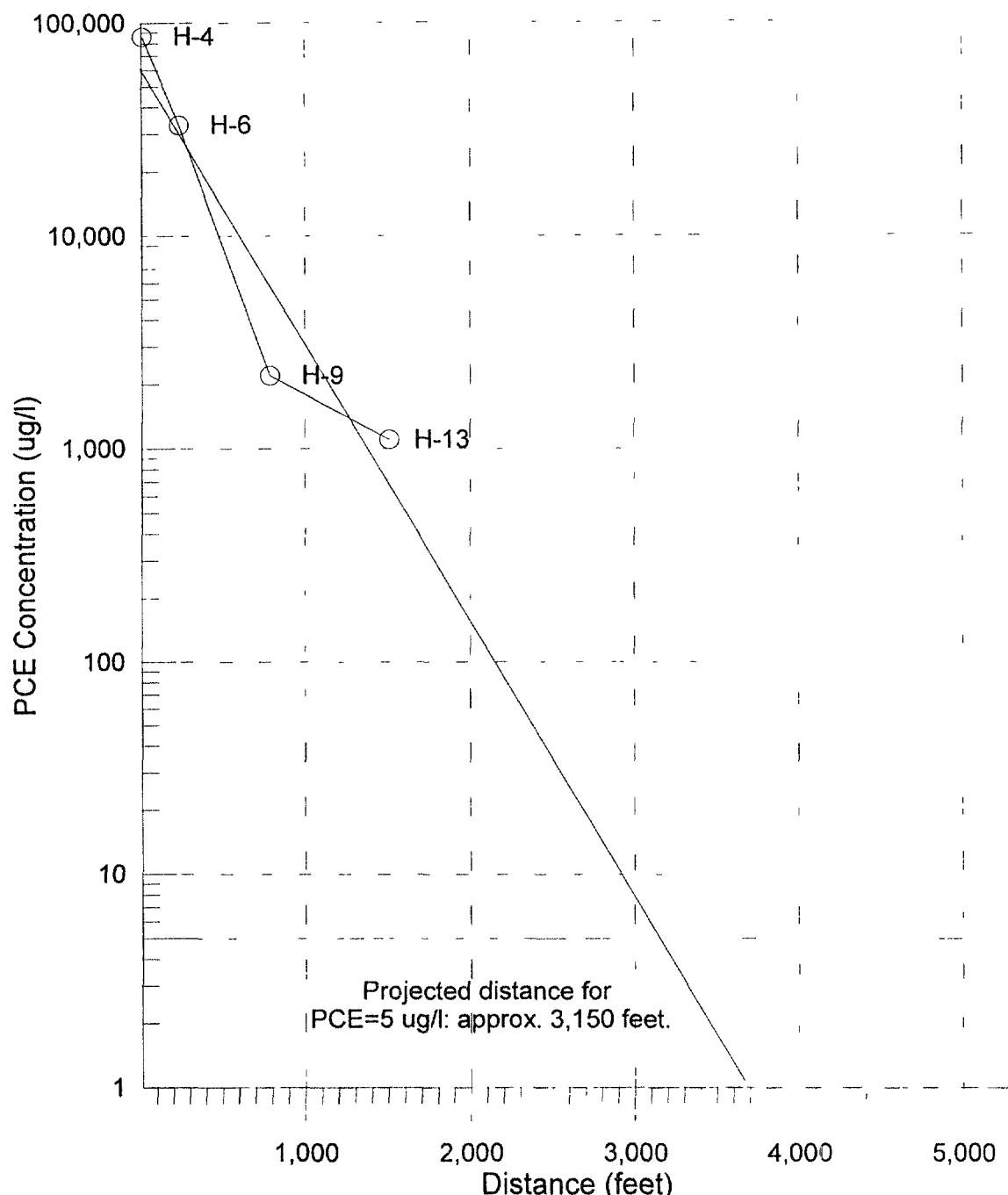


FIGURE 23  
GRAPH OF  
LOG PCE CONCENTRATION  
VS. DISTANCE  
OMEGA CHEMICAL  
WHITTIER, CALIFORNIA  
PREPARED FOR  
OPOG  
ENGLAND & ASSOCIATES  
HARGIS + ASSOCIATES, INC.